

## Miscellaneous Notes on *Corybas neocaledonicus* (Orchidaceae)

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### Abstract

The identity of *Corybas neocaledonicus* (Schltr.) Schltr., endemic to New Caledonia, is established and a full description provided. Its relationship with other members of the *C. aconitiflorus* complex is discussed.

### Introduction

While carrying out revisionary research into Australian species of *Corybas*, I extended the studies to encompass related taxa from New Caledonia and New Zealand. Those New Zealand species which have at times been confused with Australian taxa, will be the subject of a separate paper, while *C. neocaledonicus* (Schltr.) Schltr., erroneously recorded from Australia (Gray and Jones 1985), is detailed here. *Corybas neocaledonicus* is part of a complex of taxa surrounding *C. aconitiflorus* Salisb. and this group will be the subject of a separate detailed paper, including keys and illustrations.

*Corysanthes neocaledonica* Schltr. was described in 1906 based on specimens collected by Rudolph Schlechter in New Caledonia (Schlechter 1906), and was later transferred to *Corybas* (Schlechter 1924). This collection was destroyed when the Berlin Herbarium was bombed during the Second World War. A neotype was selected by van Royen (1983): *McKee 11472* from near Mt Koghi (wrongly recorded by van Royen as being from the Thy Valley) in New Caledonia. *Corybas neocaledonicus* was assumed to be endemic to New Caledonia (Hallé 1977; van Royen 1983) until a taxon, identified as being conspecific, was recorded from Queensland (Gray and Jones 1985).

Fresh flowering material of *C. neocaledonicus* showed that it was distinct from the undescribed Australian taxon previously confused with it by Gray and Jones (1985). This latter species will be described separately in a forthcoming revision of the Australian species. This mixup highlights the inadequacies of relying solely on herbarium material for the identification of species of *Corybas*, which when pressed, commonly end up as blobs with most of the diagnostic characters either lost or masked in the drying process. Live material, spirit specimens and colour transparencies are much more useful for diagnostic purposes.

Because of similarities between *C. neocaledonicus* and some Australian taxa and the confusion that has arisen in the past, it is here described fully and characterised.

## Methods

This study is based on the examination of herbarium specimens at P and CANB, together with living plants of *C. neocaledonicus* and other species cultivated in the collection of the Australian National Botanic Gardens, Canberra, and photographs of living flowers. Measurements given in the description are from living plants or spirit-preserved specimens. Notes on habitat were contributed by Mark Clements or derived from herbarium labels.

## Taxonomy

*Corybas neocaledonicus* (Schltr.) Schltr., *Repert Spec. Nov. Regni Veg.* 19: 23 (1924). *Corysanthes neocaledonica* Schltr., *Bot. Jahrb. Syst.* 39: 47 (1907). *Type*: New Caledonia, Southern District, on the summit of Mount Mou near Paita, altitude c. 1250 m, between shrubs and *Xyris*, R. Schlechter 14918, x.1902 (holotype B, destroyed); New Caledonia, Ridge from Chapeau de Gendarme to Mt Koghi, altitude 600 m, McKee 11472, 27.iv.1964 (neotype CANB!; van Royen 1983).

*Illustration*: Hallé, *Fl. Nouvelle Calédonie et Dépendances* 8: pl. 171 (1977).

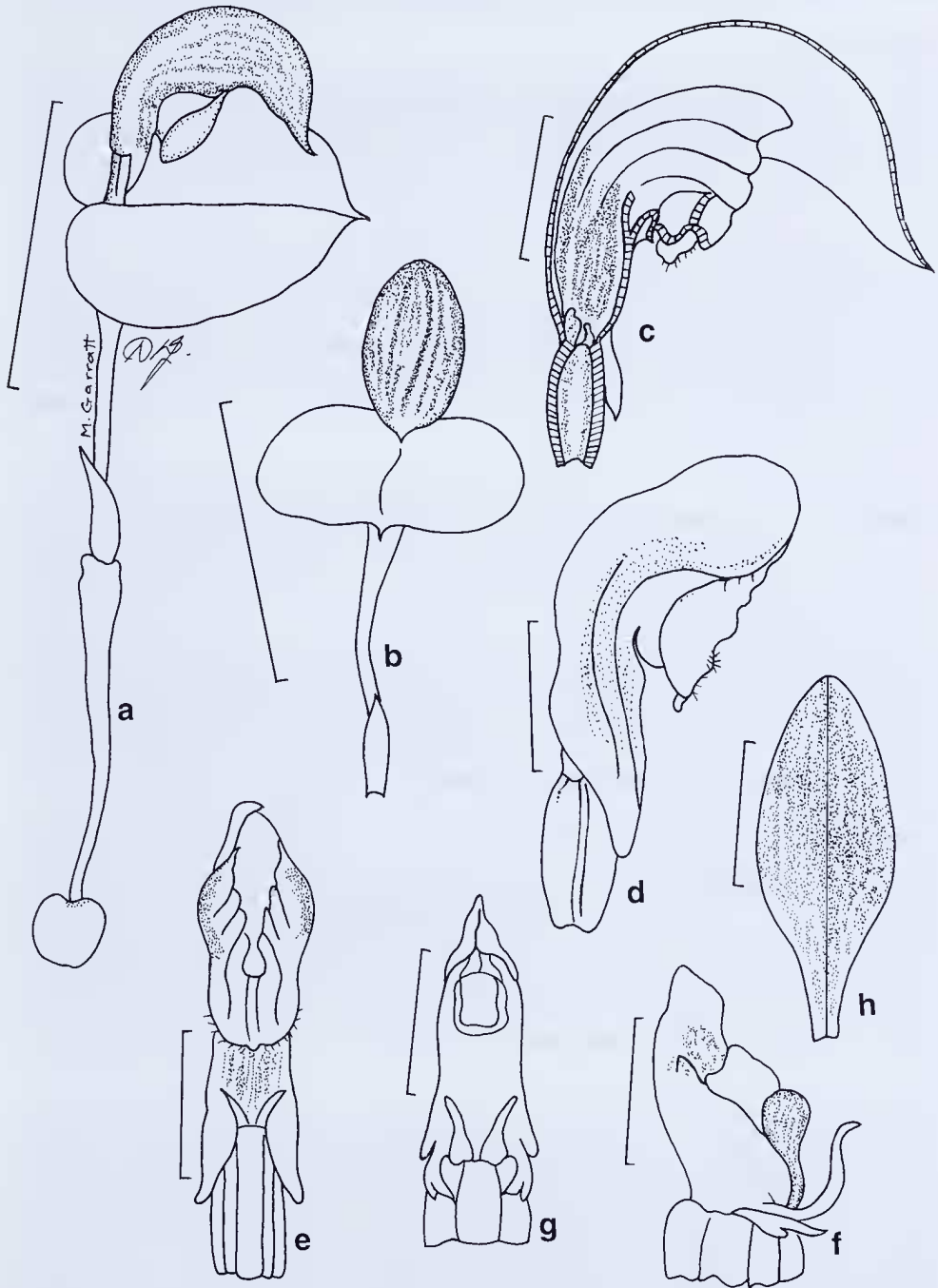
Terrestrial tuberous herb growing in colonies. *Leaf* cordate to orbicular, 10–36 mm long, 8–32 mm wide, dark green adaxially, secondary veins not conspicuous, light reddish purple and pellucid abaxially, apex apiculate. *Peduncle* c. 1 mm long. *Floral bract* narrowly ovate, 3–4 mm long, 2–2.5 mm wide, closely sheathing, acuminate. *Ovary* straight or incurved, c. 7 mm long, c. 2 mm wide. *Flower* solitary, 10–16 mm long, 5–7 mm wide, commonly dark reddish purple, rarely greyish red. *Dorsal sepal* narrowly oblong-elliptical when flattened, 16–25 mm long, 8–12 mm wide, narrowed at base, curved throughout, concave, margins more or less incurved, apex apiculate, inner surface heavily blotched with dark purplish-red. *Lateral sepals* linear-tapered, 1.3–2 mm long, c. 0.2 mm wide, acuminate, projected upwards against the base of the labellum. *Petals* linear-tapered, 0.6–0.8 mm long, c. 0.25 mm wide, acute, falcate, hidden behind the labellum auricles. *Labellum* much shorter than, and mostly hidden by, the dorsal sepal, wholly dark reddish, sometimes whitish dorsally, a large, dark purple blotch on the inner base; labellum tube c. 3.5 mm long, erect then recurved sharply and expanded into a lamina; lamina narrowly oblong-obovate when viewed from the front, c. 7 mm long, c. 3 mm wide, lacking an anterior pocket, the outer margins folded back, the inner surface with 3 or 4 longitudinal folds or pleats, the lower surface with a few scattered, short, hispid hairs, the margins irregularly crenulate; callus slightly thickened, folded or convoluted. *Labellum auricles* c. 2 mm long, closed, deflexed, whitish, hollow, tapered. *Column* c. 3.5 mm long, semi-erect, broadest at the base (c. 1.5 mm across), minutely winged, with 2 very short basal auricles and a thick, prominent, fleshy, red, pseudo column-foot. *Anther* c. 1.3 mm long, c. 0.8 mm wide, with a very short, blunt rostrum. *Stigma* c. 0.7 mm across, c. 0.5 mm high, rectangular, sunken. *Pollinarium* c. 1 mm long, c. 0.7 mm wide, consisting of 4 pollinia in 2 pairs, attached directly to an oblong viscidium c. 0.5 mm long; pollinia oblong, cream to yellowish, mealy. *Capsule* ovoid, 10–14 mm long, 3–5 mm wide, on an elongated peduncle 10–15 cm long. (Fig. 1)

### *Distribution*

Endemic to New Caledonia.

### *Ecology*

On damp, sheltered slopes in humid forests, growing under shrubs and among moss in loamy soil. Also in dense shade in rainforest with the plants nearly hidden by dead



**Fig. 1.** *Corybas neocaledonicus* (Clements 7797): **a** plant habit (flower from side), scale 2 cm; **b** flower from front, scale 2 cm; **c** longitudinal section of flower, scale 5 mm; **d** labellum and ovary from side, scale 4 mm; **e** labellum and ovary from front, scale 4 mm; **f** column from side, scale 2 mm; **g** column from front, scale 2 mm; **h** dorsal sepal (flattened out), scale 1 cm.

leaves and other litter and among low shrubs in damp soil on ridges and mountain summits. Altitude range 100–1250 m. Flowering April–October.

### Recognition

This member of the *C. aconitiflorus* complex can be distinguished from all other species by the following combination of features; relatively small (10–16 mm long), usually dark red flowers; a very narrow (c. 3 mm wide), sparsely hispid labellum which lacks an anterior pocket, and has three or four pleats along the inner walls; and, a relatively thin, irregularly folded or convoluted callus.

### Similar Species

The undescribed Australian taxon confused with *C. neocaledonicus* (Gray and Jones 1985) can be distinguished by a broader, strongly hispid labellum (5–6 mm wide), lacking any longitudinal pleats or folds and with an anterior pocket. *Corybas aconitiflorus* can be distinguished from *C. neocaledonicus* by its larger (to 28 mm long) flowers which are greyish red to reddish purple and the labellum is covered with short, hispid hairs and lacks any pleats on the inner walls.

### Notes

Schlechter (1906), noted that he had found *Corybas* (as *Corysanthes*) leaves in many places during his travels in the Southern District of New Caledonia, but flowers were only found on plants growing at high altitudes. He may have noticed variation in leaves for he stated ‘I think it possible or even probable, that several species occur on the island’ (Schlechter 1906). Clements *et al.* (1994) also noted variation in *Corybas* leaves at various localities. These conclusions are perhaps not surprising in view of the range of habitats at which collections have been made, viz. lowlands at altitude c. 100 m to mountain tops at c. 1250 m, and on soils derived from such diverse rocks as schists and serpentinites. Flowering times noted on herbarium labels range from April to October, which is extraordinary even allowing for the large range in altitude.

A study of the specimens at P indicates that two taxa of *Corybas* may be present in New Caledonia, a small-flowered, dark red species and a larger-flowered species which has a reddish-purple dorsal sepal with translucent white patches and a white labellum. Neither taxon is a match for the Australian species previously confused with it (Gray and Jones 1985). Leaf size is also distinctive in the New Caledonian plants (Clements pers. comm.) and it is noticeable from herbarium specimens that plants from lower elevations have leaves at least twice as large as those from montane localities. This variation needs to be followed up by future collectors but it also has implications regarding the neotypification of the species.

### Typification

Because Schlechter’s type material is presumed to have been destroyed during the Second World War, van Royen (1983) selected a neotype (CANB 145223). This collection consists of a single, poorly pressed specimen. Van Royen apparently did not look at the P collections as none has been determined by him. There are four collections in P from Mont Mou (Schlechter’s type locality) ranging in altitude from 200 m (*McKee* 35447) to 1150 m (*McKee* 36948). The latter collection would have been a better selection as neotype rather than van Royen’s choice which was from a very different locality to Schlechter’s and at a much lower altitude (600 m cf. 1250 m). The choice is particularly pertinent when there is a distinct possibility that more than one taxon may occur on the island.

### Etymology

Derived from the Latin for New Caledonia.

### Specimens Examined

NEW CALEDONIA: Mt Bouo, alt. 700 m, *Guillaumin and Baumann-Bodenheim 12666*, 20.iv.1951 (P,Z); Mont Koghi, road near waterfall, 3.7 km from turnoff, *Clements 7766, Thiriet and Wallace*, 18.viii.1992 (CANB); Mont Do, summit, ridge running E, *Clements 7797, Thiriet and Wallace*, 19.viii.1992 (CANB); Mont Mone, alt. 551 m, *Guillaumin and Baumann-Bodenheim 14828*, 27.vii.1951 (P,Z); Rimbea Valley, above barrage, alt. 100–200 m, *McKee 4544*, 12.v.1956 (P); Mont Koghi, alt. 500 m, *McKee 12501*, 2.v.1965 (P); Coldes Rousettes, alt. 500 m, *McKee 12817*, 23.vi.1965 (P); Mont Koghi, alt. 500 m, *McKee 25173*, 30.iii.1972 (P); Mont Mou, alt. 1100 m, *McKee 32031*, 26.ix.1976 (P); Mont Mou, west base, alt. 200 m, *McKee 35447*, 15.vii.1978 (P); Mony Mou, alt. 1150 m, *McKee 36948*, 27.v.1979 (P); Mont Oungone, alt. 450 m, *McKee 37012*, 17.vi.1979 (P); Valley de Thy, alt. 100 m, *McKee 39052*, 17.v.1981 (P); Valley de Thy, alt. 200 m, *McKee 42086*, 3 Aug. 1984 (P); Mont Algaoue, alt. 400 m, *McKee 43605*, 14.vii.1987 (P); Thy River Valley, *McPherson 1680*, 6.vi.1979 (MO,P).

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